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New ferns from Tropical America

Margaret Slosson

(with plate 23)

The discovery of the two plants which are the subject of this paper, adds another species to the already vast genus of *Polypodium* and one to the meager genus of *Loxsomopsis*. The first of these two plants was brought recently from Cuba, by Dr. J. A. Shafer, and belongs to the well-known group of *Polypodium* usually designated as the *P. trifurcatum* group. The second is taken from a large and fine collection of ferns made in Bolivia by Mr. R. S. Williams during 1901 and 1902. This collection contains a number of species still to be described.

The genus *Loxsomopsis* has been known until now by two species only, found in Costa Rica and Ecuador, respectively. It is one of the most peculiar and striking in the American tropical fern flora. Its most notable characteristic, the minute erect or deflexed, cup-shaped or pitcher-shaped sori, with their extruding columellar receptacles beset with sporangia, suggesting minute lily bells on the margins of the leaves, can be seen from the accompanying illustration of the species here described. This plant, apparently the largest and most conspicuous so far discovered in the genus, may be known as:

Loxsomopsis notabilis sp. nov.

Rhizome creeping, 3 to 5 mm. in diameter, thickly clothed with blackish or purplish castaneous acicular scales 1 to 3 mm. long, the cells of the scale uniserial above its turgid base, the scale sometimes noticeably articulated; fronds borne on top of the rhizome, uniserial, scattered, up to 2.5 m. high, up to about 80 cm. broad, deltoid, bi-subtripinnate; stipe up to about 1.2 m. long, 1.3 to 3 mm. in diameter, purplish ebeneous to castaneous, rigid, terete, clothed below with scales similar to those of the rhizome, glabrous or glabrescent above; primary rachis castaneous and terete below, stramineous and narrowly elate toward the apex; secondary rachises castaneous to stramineous; pinnae opposite or subopposite, sessile or adnate, mostly remote, spreading more or less obliquely, often arcuate, at least when dried, somewhat asymmetrical, acuminate, the apices serrate to subentire, giving rise gradually to the pinnules; basal pinnae either the broadest, 7 to 25 cm. broad, or equal to the next above, broadly ovate or ovate-lanceolate, median pinnae ovate-lanceolate or lanceolate, upper pinnae lanceolate; pinnules adnate-decurrent, the inner in the inner pinnae mostly spaced, the larger lanceolate or lance-linear, acuminate, cut obliquely almost to the costa into deltoid, ovate-oblong, or oblong-lanceolate, obtuse or acute segments, the larger of which are coarsely and obliquely lobed or toothed; smaller pinnules contiguous and similar to the larger segments; both basal pinnules reduced and sometimes the next pair somewhat so, the basiscopic basal pinnule the shortest, 1.7 cm. or less long, in the upper or median pinnae often merely a toothed auricle and then adnate to the primary rachis; upper surface bright olive green, glabrous, lower surface paler, glaucous, and sparingly furnished with minute flexuose flattened articulated hairs, especially on the veins, costae, and rachises; texture chartaceous; venation prominent, pinnate, veins catadromous; sori terminal on lateral teeth of the lobes or segments, erect or deflexed, each apical on a simple vein, or the upper branch of a once forked vein or a spur produced from the upper side of the latter branch; indusia sessile, calyciform, rarely urceolate, entire; receptacle somewhat exserted; sporangia intermixed with simple articulated paraphyses; spores fuscous, subtetrahedral, convex on the upper side, verrucose.

Type in the Underwood Fern Herbarium at the New York Botanical Garden, collected in wooded ravines, near Apolo, Bolivia, South America, July 25, 1902, *R. S. Williams 1303*.

From *L. costaricensis* Christ* and *L. Lehmanii* Hieronymus,† as described, *L. notabilis* differs chiefly in the following characteristics. From *L. costaricensis*, in the bright olive green upper surface and glaucous under surface of the lamina, in the conspicuous reduction of the principal pinnae at the base on both sides, and in the verrucose spores. *L. costaricensis* is described as having the upper surface of the lamina dark green, the lower surface not glaucous, the basal acroscopic pinnules the longest pinnules of the principal pinnae, and the spores smooth. From *L. Lehmanii*, *L. notabilis* differs in the much greater size of the leaf, in the color, blackish or purplish castaneous to castaneous, of the rhizome, stipes, and their scales, in the shape of the lower pinnae, and usually in the shape of the indusia, which for the most part are merely deeply cup-shaped. *L. Lehmanii* is described as having leaves 35 cm. or less long, stipes fuscescent, scales of the stipes and rhizome fuscous-ferrugineous, lower pinnae obliquely elongate-deltoid, and indusia urceolate.

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* Bull. Boiss. II. 4: 399. *pl. 1.* 1904.

† Bot. Jahrb. 34: 435. 1904.

Polypodium insidiosum sp. nov.

Rhizome erect or oblique, about 1.5 cm. or less long, about 3 mm. or more in diameter, the crown thickly clothed with yellowish brown lanceolate or oblong-lanceolate scales 1 to 3 mm. long, having minute, rarely jointed, processes on their margins; stipe dull brownish or blackish, slender, wiry, terete, often arcuate, at least when dried, 0.5 to 3.5 cm. long, glandular-pubescent, clothed at the base with a few scales similar to those of the rhizome; lamina 3 to 10 cm. long, 6 to 13 mm. broad, lanceolate and broadest at or below the middle, or linear, rarely oblanceolate, acute or obtuse, at base acutely cuneate and very shortly decurrent, entire, repand, or somewhat sinuate, glandular-pubescent, glabrescent; the margin and lower surface, especially about the sporangia, sparingly furnished with short brown spreading hairs, a few sometimes on the upper surface also; midvein flexuose, mostly concealed, or slightly evident below and then blackish; texture chartaceous-coriaceous; veins usually apparent by transmitted light; the primary veins mostly with from 2 to 4 pairs of simple or occasionally once forked, free or casually uniting branches; sori apical or dorsal on the innermost branches or on short spurs of these, irregularly 1- to 3-serial, orbicular or oval, 1 to 2 mm. broad, superficial; sporangia glabrous; spores finely papillose.

Type in the Underwood Fern Herbarium at the New York Botanical Garden, collected on mossy tree trunks near Camp La Gloria, a mining camp south of Sierra Moa, Province of Oriente, Cuba, at an altitude of about 762 meters, December 24–30, 1910, *J. A. Shafer 8043*.

This plant strongly suggests a small mock *Polypodium trifurcatum*. It is much smaller than that species, fruiting when barely 3.5 cm. high, and appears to have a somewhat different habit. When dried, the fronds are rigid and very brittle, and the stipes are more or less arcuate; the fronds thus point in various directions, but are not bent abruptly at the base of the lamina, as is apt to be the case in *P. trifurcatum*. The laminae when lobed are less deeply so than is usual in the latter plant and are often either entire or merely subentire.

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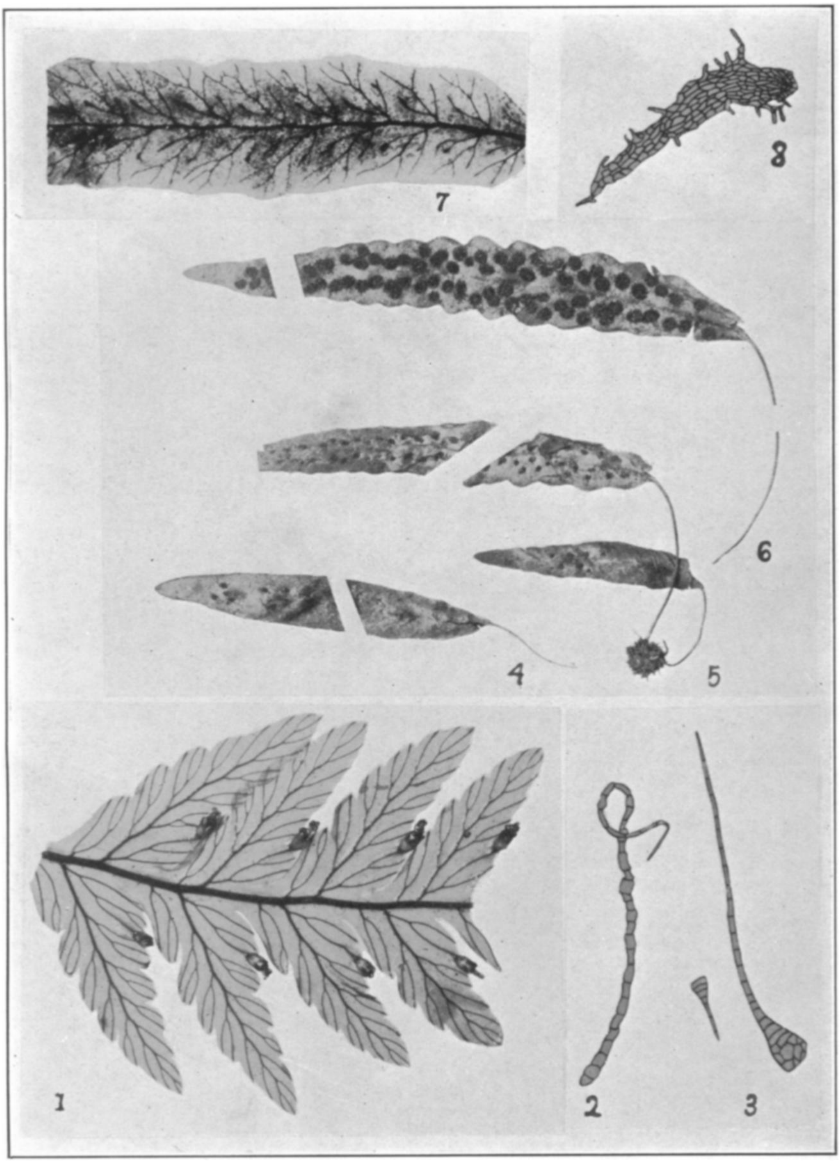
Explanation of plate 23

FIG. 1–3. *Loxsomopsis notabilis; R. S. Williams 1303*, Bolivia; 1, section of pinna, enlarged, showing sori; 2, scale from leaf bud; 3, scales from rhizome.

FIG. 4–8. *Polypodium insidiosum; J. A. Shafer 8043*, Cuba; 4–6, parts of plant, natural size, showing leaf variation; 7, section of leaf, enlarged, showing venation; 8, scale from rhizome.



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